

Claims

- [c1] c1 An apparatus as external adapter for washing machines to supply the water feed of the washing machine with pre-warmed liquid which is generated by mixing liquids of different temperature supplied to the apparatus.
- [c2] c2 An apparatus, according to claim 1, which generates out of a user temperature-setting the proper mixing ratio of liquids to match the temperature of the resulting out-flowing liquid with the user temperature-setting in a suitable way.
- [c3] c3 An apparatus according to claim 2 or claim 1, where the user-set position-setting of a lever or a knob corresponds to a mixing ratio of cold and hot liquid.
- [c4] c4 An apparatus according to claim 3, including a fastening for interchangeable inserts with different scales, where the lever or knob is moved or turned along, respectively. Each of the interchangeable inserts may correspond to combinations of cold and hot liquid supply temperatures and pressures. The scales on the inserts may carry marks of the desired temperatures of the out-

flowing liquid, where, if the lever or knob is aligned with, may correspond to the required mixing ratio of the cold and hot liquid under certain conditions of the temperature and pressure of the cold and hot in-flowing liquids. In addition an empty inscribeable insert can be used for the user to make her own marks for different washing modes under certain conditions.

[c5] c5 An apparatus according to any of the previous claims (claim1 or claim2 or claim 3 or claim4), including a thermometer to check the temperature of the out-flowing liquid.

[c6] c6 An apparatus according to any of the previous claims (claim1 or claim2 or claim 3 or claim4 or claim5), including one or more thermometers to check one or more temperatures of the in-flowing liquids.

[c7] c7 An apparatus according to claim 1 or claim 2, including a mechanism which determines and sets the mixing ratio of the different in-flowing liquids according to the user-setting of the desired temperature of the out-flowing liquid where the temperature and/or pressure conditions of the in-flowing liquids are taken into account.

[c8] c8 An apparatus according to claim 7, employing

bimetallic sensor/actuator elements.

- [c9] c9 An apparatus according to claim 8 where some bimetallic elements are replaced by electronic sensors and actuators and also electronic components may be employed to realise the proper control functions.
- [c10] c10 An apparatus according to any of the previous claims (claim1 or claim2 or claim 3 or claim4 or claim5 or claim6 or claim7 or claim8 or claim9), including an additional timer which controls one or more inlets for heated liquids in the following way: The timer can be set to a certain duration. When the timer is started, the controlled inlets are enabled, after the timer has expired after the set duration, the controlled inlets are disabled.
- [c11] c11 An apparatus according to claim 10, where the whole timer control mechanism can be enabled or disabled.
- [c12] c12 An apparatus according to any of the previous claims (claim1 or claim2 or claim 3 or claim4 or claim5 or claim6 or claim7 or claim8 or claim9 or claim10 or claim11), including pressure limiters for one or more in-flowing liquids.
- [c13] c13 An apparatus according to claim 1, where the throughput of the in-flowing liquid is controlled by a

source external to the apparatus, for example the washing machine itself. Sensor data from the apparatus may be provided to external devices.

[c14] c14 The method of supplying the water feed of a washing machine with pre-warmed liquid by mixing liquids of different temperature.